



power of competition

*A guide to Alberta's new competitive
electric industry structure*

Opportunities for Albertans

This publication has been prepared as a general guide to the important changes taking place in Alberta's electric industry. An understanding of these changes will help Albertans take best advantage of this new structure.

This publication is intended as a general reference to Alberta's new electric industry structure. It is not an official interpretation of the Electric Utilities Act, the Electric Utilities Amendment Act, 1998, or associated regulations.

Copies of these two acts and associated regulations are available from the Queen's Printer in Edmonton and Calgary:

11510 Kingsway Avenue
Edmonton, Alberta
T5G 2Y5
Phone (780) 427-4952
Fax (780) 452-0668

Main Floor, McDougall Centre
455 - 6th Street S.W.
Calgary, Alberta
T2P 4E8
Phone (403) 297-6251
Fax (403) 297-8450

Acts and regulations are available on line at <http://www.gov.ab.ca/qp>

The Electric Utilities Amendment Act is also available for downloading at
<http://www.resdev.gov.ab.ca/room/actsregs/bill27.htm>

Alberta's electric industry structure at a glance



Customers will be able to choose between competing electrical retailers. These retailers will develop innovative, customer-driven services. The phase-in will start in 1999 with interested customers who have time-of-use meters and extend to all other customers by 2001. See page 7.



While the retail market is developing, home and farm customers may choose a regulated rate option from their existing supplier for five years, starting January 1, 2001. See page 9. Eligible small commercial and industrial customers will have a three-year regulated rate option.



A level playing field for all participants in the electricity sector will foster open competition. See page 6.



Increased competition and lower regulatory expenses are expected to put downward pressure on electricity costs and rates. See page 7.



Restructuring of Alberta's electric industry does not interfere with the ability of municipalities to collect revenues through franchise agreements. These agreements give utilities the right to build, maintain and operate distribution systems within municipal boundaries. See page 14.



A Power Pool is the market for electricity bought and sold in Alberta. The independent Power Pool Council is responsible for the Pool's fair, open and efficient operation. The Council monitors markets, investigates complaints and resolves disputes. See pages 15 and 22.



A Transmission Administrator, regulated by the Alberta Energy and Utilities Board (EUB), oversees the use of the transmission system by buyers and sellers to ensure:

- Fair system access rates and non-discriminatory access for all market participants.
- The safe, reliable operation of the transmission system. See pages 16 and 22.



In 2001, long-term Power Purchase Arrangements will replace the current mechanism for recovering the costs and benefits of existing generation. The Arrangements will ensure that customers benefit from the low-cost power available from existing generation, and ensure a competitive generation market with many sellers and buyers. See page 18.



Proceeds from the auction of the Power Purchase Arrangements will be placed in a financial account overseen by the Power Pool. This will ensure that the costs and benefits of existing power continue to be shared among all Albertans. The EUB will determine an equitable and just method for sharing these proceeds. See page 19.

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Alberta government vision for the electric industry

Vision:

Achieve a competitive electricity market for the benefit of Albertans.

Action: Bring the benefits of competition to customers by providing them with the potential for choice over their retail supplier of power, the types of services they receive and how they participate in the market. This competition tends to increase the options and services available to customers and to put downward pressure on prices.

Action: Complete deregulation of the generation market, creating incentives for efficient capital investment in generation and for efficient operation. This tends to create a lower-cost industry that benefits Albertans who purchase electricity. Competitive rates also reduce manufacturing costs, affecting the price of products that customers buy.

Action: Deregulate electric industry components better served by a competitive market, such as generation and retail services. Continue to regulate the high-voltage transmission system and local distribution systems since these operate most efficiently as monopolies.

Action: Ensure fairness in all the changes to both customers who buy electricity and owners of existing regulated generating facilities. Owners will have a fair opportunity to recover the investments made in regulated generating plants. Customers will continue to receive the benefits of competitively priced power from plants that were built under regulation.

Action: Ensure a level playing field for all retailers so that customers benefit from open competition. All retailers will have equal access to customers. Strict codes of conduct will govern the relationship between regulated operators of distribution systems and retailers so that no retailer can gain an unfair advantage.

Consultation – an ongoing process

Consultation with Albertans on the changes to Alberta's electric industry dates back to 1990. This process has involved:

- Consumer groups.
- Environmental groups.
- Green power producers.
- Independent power producers.
- Industry.
- Irrigation farmers.
- Mayors.
- Municipalities.
- Retail marketers.
- Rural electrification associations.
- Utility companies.

Consultation will continue as the government seeks the advice of Albertans on the best ways to implement the changes and continue to streamline the system. Your comments are invited.

Send your comments by letter, fax or e-mail to:

Electricity Branch
Alberta Department of Resource Development
9945 – 108th Street
Edmonton, Alberta T5K 2G6

Phone (780) 427-8177
Fax (780) 427-8065
e-mail electricity@resdev.gov.ab.ca

Additional information

A number of supporting documents will be prepared by the Department's Electricity Branch as regulations under the Electric Utilities Amendment Act are developed and approved. These documents will expand on the information in this publication.

Copies of these documents will be available through the Electricity Branch at the address listed in the previous section on consultation and on the back cover. These documents will also be posted on the Department's web site.

Additional information about electric industry restructuring is available on the Internet at:
<http://www.resdev.gov.ab.ca/electric/index.htm>

Other useful web sites:

Alberta Energy and Utilities Board	www.eub.gov.ab.ca
ATCO Electric	www.atcoelectric.com
Edmonton Power	www.edpower.com
ENMAX (City of Calgary)	www.enmax.com
Lethbridge Power	www.lethpower.com
Power Pool of Alberta	www.powerpool.ab.ca
Red Deer Electric Light and Power	www.city.red-deer.ab.ca/engin/power.html
TransAlta Utilities Ltd.	www.transalta.com
Transmission Administrator (ESBI)	www.eal.ab.ca
Western Systems Coordinating Council	www.wscc.com

Section 1: The challenge

The international challenge

The world is changing fast. In the electricity sector, the status quo is being challenged by:

- Technological change such as the ability of independent, non-utility producers to generate low-cost, environmentally friendly power and situate their generators in the best possible location.
- The determination of governments around the world to make their electrical industries more flexible, responsive and competitive.

The result is that governments are re-examining their traditional electric industry structures. Many have concluded that the old monopoly structures just don't work well enough anymore.



They found that the old structures don't allow the forces of open competition to increase efficiency and bring higher-quality service to customers. They concluded that these structures tend to be slow in allowing industry to respond to technological change. These structures often put the focus on the ability of utilities to win battles in front of regulatory boards instead of winning them in the marketplace by being more creative and efficient.

Governments have seen how successfully deregulation has worked in other areas of the economy including airlines, cable and Pay TV channels and parcel delivery. The result in most cases has been more efficient operations, more choices for consumers and downward pressure on prices.

The electric industry is part of this changing world. Change is under way on a worldwide scale. In Australia, New Zealand and the United Kingdom, the change has involved breaking up government-owned monopolies. In the United States, excessively high electricity rates in some areas and large rate differences among utilities are driving the introduction of competitive forces, particularly in the generation sector.

Electric industry deregulation and the introduction of competition are working well in other areas. In fact, rates have gone down in virtually every jurisdiction that has introduced retail competition in electricity markets.

Electricity prices tend to fluctuate within these new, open markets. Prices are liable to rise in times of high demand and drop in response to reduced demand during off-peak hours. Overall, however, these rates tend to be more competitive than they would have been under regulation and monopoly markets.

The U.S. Department of Energy estimates that customers in the U.S. will save more than \$20 billion U.S. a year once retail competition has been introduced in all the states. For a typical family of four, that translates into more than \$230 U.S. a year in savings from lower electricity bills and reduced costs for goods and services that require electricity.

In the United Kingdom, electric industry restructuring and the introduction of competition into the generation and retail sectors resulted in electricity rate reductions of 10 to 17 per cent between 1990 and 1995. As well, independent power producers entered the generation market with 7,000 megawatts of new capacity.

In these countries, competition has meant more players in the industry. It has meant companies striving to be more efficient and offer better services and products so they can have an advantage over their competitors. It has meant competitive prices for consumers.

Failure to change and adapt brings the real risk of falling behind and neglecting the interests of consumers.

The average Alberta residential customer spends about \$650 a year on electricity. Many industries devote more than 20 per cent of their total spending to electricity.

The challenge at home

Our system before deregulation

Alberta's electric industry structure evolved over time into a mix of privately owned and municipally owned utilities. Three utilities supply more than 90 per cent of

The challenge facing Alberta was how to preserve and enhance the very real strengths of Alberta's existing electric industry while building an improved system for the future.

the power to the province's integrated power grid: investor-owned TransAlta Utilities Corporation and ATCO Electric and municipally owned Edmonton Power. (The municipally owned Medicine Hat system provides power primarily for its own city.)

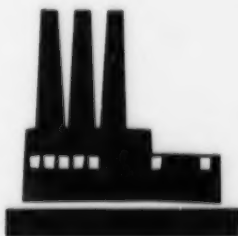
These utilities were involved in all components of electric service:

- Production of power.
- Transmission (bulk delivery).
- Distribution (which includes local delivery and delivery to the end user).

TransAlta provides distribution services in southern Alberta and parts of central Alberta. ATCO Electric serves northern Alberta and part of east-central Alberta. Edmonton Power serves the City of Edmonton.

Cities such as Calgary, Lethbridge, Red Deer and many smaller communities own their own distribution systems. They buy power for their systems from TransAlta or ATCO Electric.

More than 90 per cent of Alberta's power comes from large generating units that burn low-sulphur coal. The remainder of the electricity comes from units powered by natural gas, cogeneration systems and small hydro, in addition to windmills and energy from biomass, peat and waste wood. These generating facilities are all connected to an integrated, interconnected transmission system that serves the entire province.



This system consists of more than 50 generating units, 19,000 km of transmission lines and connections with British Columbia and Saskatchewan.

In the traditional structure, each utility was a regulated monopoly. Each had a right and an obligation to provide distribution services to a particular geographical area.

This meant that customers "belonged" to a particular utility, depending on where they were located. Customers had to deal with this utility for their power needs and services.

In the absence of competition, costs and rates of these utilities were reviewed and approved by either a provincial regulator or municipal authorities. Generating units were built by the individual utilities but had to be approved by the regulator. The regulator approved rates for customers that were set high enough to allow the utilities to recover their investment in the units and their operating costs, in addition to earning a reasonable return on their investment.

That traditional structure worked reasonably well in Alberta. Yet it could not be fully responsive to the international and technological changes in motion.

Other jurisdictions were considering the move to more responsive, efficient, flexible electrical systems – and Alberta risked falling behind. Alberta risked the erosion of its low-cost power advantage compared to other markets. Albertans faced a potential reduction in their ability to compete effectively for investment and jobs.

Businesses with new ideas, new services and new products such as wind power were being left out – or brought into the system only through artificial means. These artificial means sometimes included government grants, guaranteed market access and incentive payments.

In addition, regulatory costs were high for both government and industry. Utilities had to devote considerable time and expense to preparing for hearings on matters such as their allowable costs. The lengthy hearing process also hindered the industry's ability to be responsive to market changes.

The need for a new approach was apparent. The challenge in this process was how to preserve and enhance the strengths of Alberta's existing electric industry while building an improved system for the future.



Starting in 1990, these topics were the subject of intense discussions involving government, utilities, consumer groups and industry.

The early stages of discussions centered on how new generating plants are planned and approved and how costs were averaged among utility companies through the Electric Utilities Marketing Act (EEMA). It became clear, however, that none of the questions could be resolved in isolation but had to be addressed through a comprehensive approach. Discussions broadened to examine wider questions about the structure of Alberta's electric industry.

That approach made the province one of the leaders of electrical industry restructuring in North America.

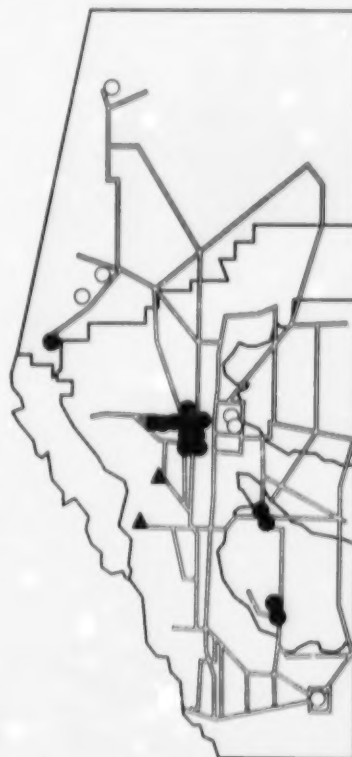
This document looks at the solutions arrived at through this comprehensive approach – and what this means for Alberta's electricity consumers now and in the future.

Goals

Goals of electric industry restructuring:

- Ensure that electricity rates remain competitive, benefiting all consumers and allowing the province to compete effectively for investment, resulting in jobs and economic benefits.
- Enhance efficiency, innovation, responsiveness and value to customers.
- Further the development of a competitive generation market and encourage the addition of new generation.
- Ensure a secure and reliable transmission system.
- Create a competitive retail market for electricity services and ensure appropriate safeguards are in place to protect consumers against unfair market practices.

Alberta Interconnected System



- Investor and municipal utilities
- Independent power producers and interconnections

1998/99 Capacity (Megawatts)

	● Coal	○ Gas	▲ Hydro	Total
Utility generation				
ATCO Electric	1571	104	-	1675
EPCOR	772	867	-	1639
TransAlta Utilities	3305	-	795	4100
City of Medicine Hat	-	205	-	205
	5648	1176	795	7619
Non-utility generation				
Industrial	-	-	-	791
Small /independent power producers	-	-	-	185
New independent power producers	-	-	-	200
				1176
Interconnections				
British Columbia	-	-	-	800
Saskatchewan	-	-	-	150
Major transmission lines				950

Section 2: A made-in-Alberta model

Electric Utilities Act – the first step

The Electric Utilities Act marked the first step in the transformation of Alberta's electric industry to meet the challenges facing it and to begin the process of introducing competition for the benefit of customers across the province.

The Act marked a turning point in the evolution of Alberta's electric industry. Developed in consultation with participants in all aspects of the electric industry, the Act reflected a broad consensus of the input of interested Albertans across the province on how to best meet the objectives for change. It was passed in 1995.

Key purposes of the 1995 Act were:

- To establish an efficient market for generation based on fair and open competition.
- To ensure that the benefits and costs associated with existing regulated plants continue to be shared equitably by current and future customers throughout the province.
- To ensure that investment in new generation is guided by competitive market forces.
- Where regulation was still necessary, to minimize its cost and provide incentives for efficiency.

The Electric Utilities Act was only the first step in the transition of Alberta's industry. The Act set up a number of transitional measures to begin a gradual and orderly move from regulation to open competition. It also put aside a number of issues, such as the introduction of retail competition, for resolution later.

More competition - more efficiency

In some countries such as the United Kingdom, the move to bring in more players and introduce open competition has meant privatization of publicly owned utilities. Alberta's situation is different. The province had long been served by a mixture of private and public utilities such as investor-owned TransAlta Utilities and ATCO Electric, combined with municipally owned generation and distribution utilities.

The government and stakeholders saw that all these public and private entities could compete against each other in an open market. The more potential competitors, the better. The more competition, the more efficiency as the competing entities strive for market advantage.

Meanwhile, the process of study and consultation continued. In 1996, the Department undertook a formal monitoring of stakeholder satisfaction with the changes introduced by the Electric Utilities Act. Stakeholders told the government they were concerned about the pace, direction and commitment to further restructuring. Stakeholders asked the government to state a clear vision of the future and set firm guidelines on both direction and pace.

The Department spent 1997 working with stakeholders to understand their concerns and build a plan that addressed those concerns. It brought in independent experts – world-class consultants whose expertise in these areas is recognized and acknowledged by stakeholders – to evaluate and help finish the plan.

These studies and plans resulted in the Electric Utilities Amendment Act, 1998. It was assented to in April 1998.

Electric Utilities Amendment Act, 1998 – the next step

Key purposes of the Act are to:

- Complete the orderly transformation of Alberta's electric industry into a competitive, market-driven structure that benefits all Albertans.
- Continue to regulate the high-voltage transmission system and local distribution systems since these operate most efficiently as monopolies; deregulate those components better provided by a competitive market.

Government and stakeholders saw that the market could be opened to independent power producers and independent retailers as well as to both privately owned and publicly owned utilities. Anyone could compete to build new power generation or provide retail services.

The playing field would be level for all, thus enhancing competition for the benefit of customers. In this new system, no utility or company would be able to exercise undue market power by controlling the supply of power and pushing up the price without fear of losing market share.

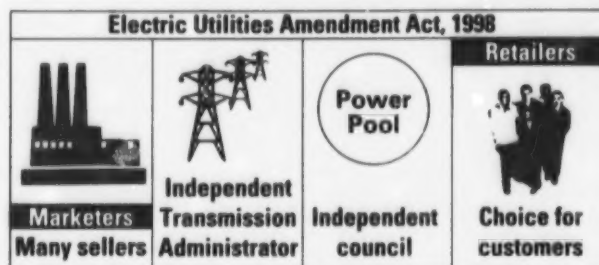
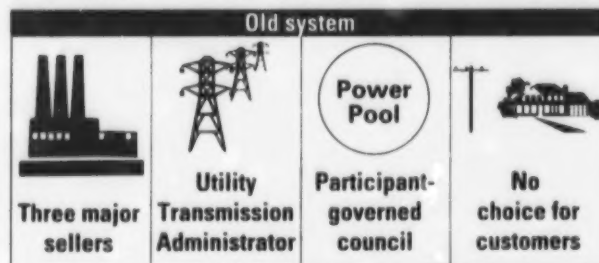
- Bring the benefits of competition to customers by providing them with choice over their retail supplier of power, the types of services they receive and how they participate in the market.
- Complete deregulation of the generation market, creating incentives for efficient capital investment in generation and for efficient operation. This tends to create a lower-cost industry, putting downward pressure on customers' rates. Lower rates also reduce manufacturing costs, affecting the price of products that customers buy and providing industry with a competitive advantage.
- Ensure a level playing field for all buyers and sellers of electricity so that customers benefit from open competition. Competition in the generation and retail markets tends to make businesses operate more efficiently, thereby putting downward pressure on prices. Competition also helps to ensure that no single firm can dominate the market and charge high prices without fear of losing market share to a competitor.
- Ensure fairness in all the changes to both customers who buy electricity and owners of existing regulated generating facilities. Owners will have a fair opportunity to recover the investments made in regulated generating plants. Customers will continue to receive the benefits from plants that they paid for under regulation.

Main elements

	Pre-1995	Electric Utilities Act, 1995	Electric Utilities Amendment Act, 1998
Supply (Generation for wholesale market)	Regulated	Deregulated	→
Transportation (Transmission and distribution wires)	Regulated	→	
Retail (Customer services)	Regulated	Regulated	Deregulated

Existing structure and new structure

Generation → Transmission → Distribution



Principles for restructuring

- All consumers in Alberta should share the benefits and the responsibilities for costs associated with existing regulated generating units built under regulation.
- Barriers to entry in the generation market should be removed so that independent power producers and importers can compete on an equal basis with utilities.
- Products and services that can be provided competitively should not be provided by regulated monopolies. Regulation, where necessary, should provide incentives for efficiency.
- Customers should be empowered to choose their provider of retail electricity services and the type of rate they pay, depending on their individual needs and preferences.
- Markets for retail services should be shaped solely by competitive forces. All market participants should enjoy a level playing field that allows open competition and benefits consumers. No participant should have unfair competitive advantages arising solely from its established position in the industry, access to historical information or ownership by a municipal government.
- While the retail market is developing, home, farm and eligible small commercial and industrial customers should be able to choose a regulated rate option from their existing supplier for five years, starting January 1, 2001.
- No utility should be forced to divest itself of any portion of its generating assets.

Section 3: What restructuring means for consumers

Choices for households, families and individuals

In Alberta's traditional system, consumers of electric power "belong" to a particular electrical utility, depending on where they live. If they live in a town or city, their power bill comes from that utility. Most residents of smaller communities are billed by ATCO Electric, TransAlta Utilities or a rural electrification association (REA). They have no choice about who supplies their electrical service; it all depends on where they live.

Alberta's new restructured electric industry system opens the door to competition and customer choice, starting in 2001. Decisions are made by the customer rather than by the utilities or a regulator.

Albertans can choose the supplier that offers them the best combination of price and service suitable for their particular needs.

Customer choice and power bills

Alberta's new competitive electricity industry will enable consumers to make better-informed choices about their power consumption habits.

When full retail competition starts in the electric industry on January 1, 2001, consumers will be able to obtain more information about how they use electricity and how much these patterns cost them. For example, in the future, customers will be able to purchase time-of-use meters that monitor both power consumption and the time when the power is consumed. (With the advent of competition in other jurisdictions, the price of these meters has dropped to around \$150.)

Some retailers will likely offer packages that include installation of a time-of-use meter and provision of time-of-use service.

This will enable consumers to be billed for power usage at one rate during peak hours and at a lower rate during non-peak hours. Peak hours normally include afternoons and evenings during the week. Non-peak hours usually include mornings or late evenings during the week and weekends in general.

Competition and customer choice

An important principle behind electric industry restructuring is that opening the marketplace to competition forces existing power providers to become more efficient, cost-effective and creative. New businesses arise to compete with existing businesses. In seeking market advantage, companies strive to design and offer at competitive prices the products and services that their customers really want.

This has been the experience in other sectors of the economy such as the airline industry. When the U.S. deregulated the airline industry in 1978, fares dropped by 20 to 50 per cent. The intense competition and restructuring that followed showed how inefficient the airlines had become under regulation.

In the same way, deregulation of broadcasting opened the door for more competition in cable and Pay TV channels. This led to a wide array of choice for consumers.

Competition in parcel delivery now involves companies such as UPS, FedEx, Purolator and Greyhound, as well as Canada Post. The result has been lower rates, faster delivery and better service. Consumers can make their choices based on price, convenience and many other factors.

Across the world, the same process is happening in the electricity sector. Regulated monopoly markets are giving way to competition and customer choice.

Alberta's goal in this process is to increase the overall efficiency of the electric industry, maintaining the Alberta Advantage of competitive electricity prices.

More information on customer choice will be available as regulations are developed in consultation with stakeholders. This information will be available at the web site listed on the back cover or through the Electricity Branch at the address listed.

Power bills that show the split between peak and non-peak hours will make it easier for consumers to evaluate their energy consumption habits, if they wish. Armed with this information, consumers can decide whether they would like to alter their consumption patterns – and lower their monthly power bill.

For example, a business or household could potentially save money by operating equipment or appliances under a cheaper rate during non-peak hours.

In addition, they may also be able to reduce demand charges, which are based on the highest demand that their business or home places on the electric system.

This can be done by staggering the times when equipment or power-hungry appliances are used during a day, rather than running everything at once at peak demand times. Because less electricity needs to be delivered at that peak time, more supply will be available. That could mean lower electricity costs for consumers.

As well as saving the consumer money, these changes can have a number of other results for all Albertans:

- A beneficial effect on the entire electrical system through the reduction of peak load, thereby lowering the average price paid for electricity consumption across the province. Reduction of peak load means that fewer power plants need to be built to meet Alberta's electricity demand.
- Helping to ensure that the system is able to meet all the demands on it by lowering peak demand.
- Helping the environment by reducing the amount of electricity that needs to be produced, thereby lowering production of emissions such as carbon dioxide, a greenhouse gas.

A number of other new services are expected to be introduced in the new competitive retail market. Some retailers may add value by combining a number of services such as gas, electricity, telephone, credit and travel for one-stop shopping, or by changing a household's payment date to one that is more convenient.

Retailers may also offer green power rates for customers who wish to support the more environmentally friendly means of electrical generation such as wind power. See page 10.

Peak demand (winter)



Choices for rural electrification association members

Members of rural electrification associations (REAs) and other rural electricity customers will be able to make the same choices as urban customers about their electrical suppliers and the kind of services they would like to receive.

For their part, REAs will be eligible to become licensed retailers and offer services to any customers they want to serve in Alberta. However, REAs will not have exclusive rights in any area or with any group of customers.

In the same way, REA members will not be forced to choose their REA as their retailer. All Albertans are free to choose whatever retailer is able to offer them the best combination of price and service. It's an individual decision. The Department of Resource Development will monitor the development of customer choice to ensure that competition is developing for customers in all areas of the province.

Customer help with the transition to competition

A five-year regulated rate option will be available to help home and farm consumers make the transition to the new, competitive retail market for electricity and related services. Customers who take this option will have up to five years to get more familiar with the new system. Eligible small commercial and industrial customers will have this option for three years.

Under this option, owners of distribution systems will be required to continue to offer a regulated rate option to small and residential consumers for five years after the start of retail competition on January 1, 2001.

As is the case now, the regulated rate will be set by the owner of the distribution system (TransAlta Utilities, ATCO Electric, city councils or rural electrification associations) and approved by the Alberta Energy and Utilities Board (EUB).

The option will run from January 1, 2001 to December 31, 2005. After an appropriate notice period, customers may decide to leave the option at any time during the five years. They may then purchase their electricity and related services from the retailer of their choice, just as they choose among competing suppliers of other products and services.

Energy efficiency

One direct way of saving money, helping the environment and lowering the system's peak load is by cutting energy consumption. A few energy-saving tips for residential customers:

- Use a timer on your car's block heater. Block heaters don't need to be on for more than four hours at a time, regardless of temperature. You'll save about 50 per cent on plug-in costs.
- Use power-hungry appliances such as electric clothes dryers and dishwashers during off-peak hours.
- If you replace 25 per cent of your lights in high-use areas with florescent bulbs, you can save about 50 per cent of your lighting costs. Energy-efficient appliances can also cut power consumption.
- Central air conditioners are power-hungry and expensive. Ceiling or window fans can keep you cool on most summer days.

Competition for customers

Independent retailers and the retail affiliates of utilities will compete to offer retail electrical services to consumers, just as airlines, parcel delivery companies and other formerly regulated industries compete for customers. In this system, any licensed independent retailer or the retail affiliate of a distribution utility can purchase electricity through the Power Pool and sell it to customers in Alberta.

Retailers will be licensed and strict rules will govern their relationship with customers and their access to private information. This will protect customers against misleading advertising or deceptive market practices.

Retail affiliates of utilities will also be governed by a code of conduct to ensure they compete fairly with new, independent retailers. In the same way, REA members will not be forced to choose their REA as their retailer.

Advances in cogeneration

Since the Electric Utilities Amendment Act was put into effect in 1998, a wide range of companies across Alberta have announced cogeneration projects that will significantly increase the province's generation capacity and provide efficient energy for their operations.

Cogeneration simultaneously produces electricity and useful heat. This very efficient procedure is often employed at industrial plants where the heat produced can be used in the manufacturing process and for general space heating. The remainder of the heat can be used to drive efficient turbines that generate electricity. Surplus power not needed for the industrial system is sold through the Power Pool, adding to Alberta's capacity.

The restructuring of Alberta's electric industry has opened the way for cogenerators to sell the electricity they produce into the Power Pool.

This was far more difficult a few years ago. These independent producers were required to go to their local utility first and try to negotiate a sale price. If no agreement could be reached on the terms, the Alberta Energy and Utilities Board could be asked to hold a hearing on the matter. This was an expensive and time-consuming process. Now any business can build new generating capacity in the province and compete freely in the generation market.

Advances in technology, most notably the development of efficient smaller turbines, enable power to be produced through cogeneration at costs that are now lower than at some larger generating units.

In this way, efficient and environmentally sensitive generation facilities can be built without the need to spend billions on massive traditional plants. Instead of spending a billion dollars for an 800-megawatt plant, companies are building a number of smaller cogeneration plants in the 40-400 megawatt range for less cost per megawatt.

Opportunities for green power

The new electric industry structure provides all electricity generators with equal opportunity in the generation market. This includes generators using renewable fuel sources such as wind power as well as generators using coal or natural gas. Electricity from renewable energy sources is often referred to as "green power."

Like the others, green power generators have open, non-discriminatory access to the Power Pool through which electricity is bought and sold in Alberta. See page 15. Green power producers are enthusiastic supporters of the new electric industry structure. Under the provisions for retail competition in the structure, retailers can sign up consumers who wish to support green power. Then the retailers contract with green power suppliers for the electricity needed to serve their market.

Some Alberta utilities have already introduced pilot green power rates for customers and have signed agreements with companies to fund the generation of power from wind turbines near Pincher Creek and Hillspring.

Whether such projects are successful or not depends on how much value consumers put on supporting green power, not on a regulatory hearing or a government decision. That's the essence of a competitive market.

Alberta has been a Western Canadian leader in helping to launch development of renewable energy.

The Small Power Research and Development Program helped to encourage a wide range of renewable energy projects including small hydro, wind and energy from biomass, peat and waste wood. It provided entry into the electric grid for entities such as the 19-megawatt Cowley Ridge Project in the Pincher Creek area, which became the largest operating wind farm in Canada.



In this new market, customer support of wind power and other renewable power sources will be an important factor in determining the future growth of the industry. At present, customers who support green power must be willing to pay a higher rate because the direct cost of generation from renewable sources is generally higher than the cost of conventional production.

Power generation from other non-traditional sources is also expanding. One emerging trend is capturing waste gas from oil wells before it is flared and using it to generate power. Another trend is to draw off gas from landfills and use it to supplement other fuels in power generation. All this power can be sold through the Power Pool.

Customer choice: first steps

Starting in 1999, some business and industrial customers with time-of-use meters will be able to make their own arrangements for the power they require, subject to some location-based limitations. This is a pilot project that will prepare the way for the opening of the retail market to all customers, starting in 2001.

This move is expected to result in cost-saving opportunities for customers. By buying directly from the Power Pool and contracting with the Transmission Administrator to provide system support services, these customers will have the opportunity to make price-responsive demand decisions that can help them save money. This entails reducing power use when the Pool price rises and increasing use when the price falls.

Price-responsive decisions help to increase the efficiency of Alberta's electrical system since less reserve capacity is needed if some consumers are able to curtail usage during certain periods.

This can help reduce energy costs for all customers. For business and industry, such savings can help to keep Alberta competitive in international markets, thereby increasing jobs and prosperity for Albertans.

Protection for customers

The Electric Utilities Amendment Act, 1998 sets up a number of independent entities designed to ensure the proper functioning of the electricity market and a level playing field. These entities protect the interests of customers and other market participants. They include:

An independent Power Pool Council.

The Power Pool was initially run through the Power Pool Council by stakeholders such as the large utilities and consumer groups. Their skills and knowledge were needed to launch the organization. By 1998, however, the Power Pool Council was ready to be turned over to an independent governing body with members appointed by the Minister of Resource Development based on their expertise and experience in areas such as business and information systems.



These independent individuals have no material stake in the market. They ensure that the Pool operates in the public interest as a fair, open and efficient market for power and that all market participants are treated fairly. The Council may impose fines or sanctions on market participants found to be engaging in anti-competitive behaviour or abusing market power.

An independent Market Surveillance

Administrator. The Electric Utilities Amendment Act created the position of Market Surveillance Administrator. An independent individual with no material stake in the electricity market has been appointed to it by the government.

The Market Surveillance Administrator monitors electricity markets to ensure their efficient and fair operation and compliance with all rules, laws and regulations governing the behaviour of participants.

The administrator investigates behaviour of market participants and responds to complaints. The administrator also works with the EUB and the federal Competition Bureau to ensure compliance and to avoid wasteful duplication of effort.

An independent Transmission Administrator.

An independent Transmission Administrator has been appointed by the government to ensure non-discriminatory access to the market by all suppliers of power and system services.

Codes of conduct. Codes of conduct are being put into place by the government to ensure that retailers affiliated with regulated distribution utilities do not have unfair advantage over independent retailers.

In addition to these entities, a number of agencies function as industry watchdogs to protect the interests of consumers. They include:

- **The Alberta Energy and Utilities Board (EUB).**

This is an independent, quasi-judicial agency of the Alberta government. It will continue to regulate transmission and other areas that remain under regulation and will investigate and rule on regulated rate disputes and system access problems.

- **Consumer Affairs.** This is a division of Alberta Government Services. It works to foster a fair marketplace by providing timely, effective enforcement mechanisms to deter dishonest market practices and by encouraging consumer awareness and self reliance.

- **Competition Bureau.** This federal government organization oversees the administration and application of the Competition Act and investigates complaints. The act is based on the premise that, where possible, the process of competition should determine market outcomes. It works to discourage deceptive business practices.

- **The Alberta Securities Commission.**

It is responsible for the regulation of Alberta's capital market. It investigates suspected violations of its regulatory requirements and takes enforcement action where appropriate.

The Alberta government has ultimate responsibility for ensuring that the markets are working. The government will continue to monitor the effectiveness of the markets on an ongoing basis.

Section 4:

What restructuring means for municipalities

Municipalities are free to participate in the new electricity market if they wish. For example, they can take part as a retailer of electrical services, although they are under no obligation to do so. These markets will be open to any retailer.

All participants in the retail market – public and private – will play by the same rules. This will ensure a level playing field that fosters full and open competition for the benefit of consumers.

Retail affiliates

Owners of electrical distribution systems, including municipalities, must set up arms-length affiliates if they decide to participate in the retail market. This will ensure a level playing field. These affiliates can then compete freely with independent retailers to offer rate packages and related services to customers.

All retailers, including municipal affiliates, will be licensed. A code of conduct for retail affiliates will ensure that they do not have unfair access to customer information or business decisions concerning the distribution system that other retailers would not have.

This level playing field also extends to taxation. Municipalities, like other levels of government, do not pay income taxes. Tax-free municipal affiliates would therefore have an unfair advantage when competing with tax-paying private-sector companies.

For that reason, any municipality that creates a retail affiliate will be required to pay an amount in lieu of income tax on retail operations into a fund that will be distributed equitably to all Alberta consumers. The EUB will determine a just and equitable method for allocation of this fund.

Who distributes electricity in Alberta?

The cities of Edmonton, Calgary, Red Deer and Lethbridge, the towns of Cardston, Fort Macleod, Ponoka, the Municipality of Crowsnest Pass and more than 100 rural electrification associations (REAs) own their own distribution systems.

Municipalities regulate the rates charged residents for electricity services.

Distribution systems for Alberta's remaining municipalities are owned by TransAlta Utilities or ATCO Electric. The Alberta Energy and Utilities Board regulates the rates charged by these two utilities. Today, these distribution utilities have four main functions:

1. They build and maintain the local wires that connect customers to the power system.
2. They install and read the meters that measure how much power a customer uses. (Utilities perform this function for most REAs.)
3. They pay for the power used by all of their customers, plus charges for delivery of that power on the transmission system.
4. They design "rate packages" for customers and collect money from them based on these rates.

Under the new system, only building and maintaining the local wires will remain regulated monopoly services. The other functions can be provided by any licensed retailer. The competitive retail market, which opens in 2001, will include all the other functions.

Municipal distribution services

Municipalities that own their distribution systems may continue to maintain these wires, build new wires as necessary and connect customers to them. They also have the option of contracting with a wire service provider for the supply of these services. Distribution wires will be a "common carrier" for electricity, no matter which retailer buys and sells the power that is distributed on the wires.

Municipalities will be compensated for providing this distribution service through tariffs that will be charged to retailers. Municipalities must prepare these tariffs before full customer choice is introduced on January 1, 2001.

Municipalities that do not own their distribution systems currently receive franchise revenues from either TransAlta Utilities Corporation or ATCO Electric. These franchise agreements give either company the sole and exclusive right to build, maintain and operate distribution systems within the municipalities.

The Electrical Utilities Amendment Act, 1998 does not change the right of municipalities to grant a franchise to an owner of a distribution system.

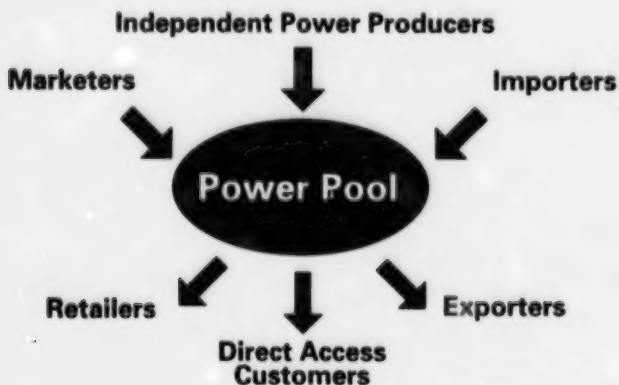
More information on challenges and opportunities for urban municipalities under restructuring will be available as regulations are set in consultation with stakeholders. This information will be available at the web site listed on the back page or from the Electricity Branch at the address listed.

Section 5: How the new system works

What the Power Pool does

The Power Pool of Alberta is an open-access, competitive market for electric energy. The Pool has been operating since January 1, 1996. It functions somewhat like a stock market. Electricity prices are set every hour at the lowest price that brings on enough supply to meet the demand.

This market is non-discriminatory and open to any generator. Generators who can produce power at a lower cost have an advantage. The result is that market participants must continually look for ways of increasing their operating efficiencies and thereby cutting their costs for producing power.



All power generated in Alberta, except from exempted industrial systems and generators in remote locations not connected to the grid, is now sold through the Power Pool. This power is "pooled" across Alberta's interlinked grid to meet the total load of all customers on the system.

The Pool was set up under the Electric Utilities Act. The Act stipulates that all electricity traded in the province must be bought and sold through the Pool.

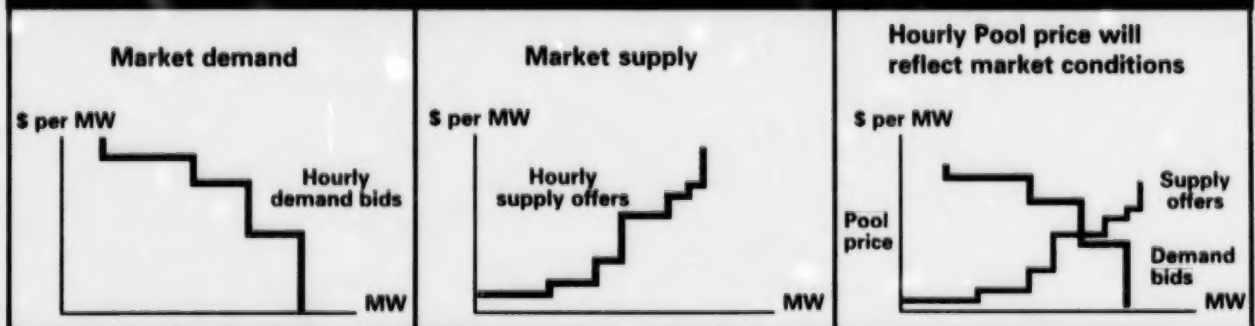
Some jurisdictions, in addition to using pools, also allow buyers and sellers to contract with each other directly. Market participants in Alberta have expressed a strong interest in adding this kind of flexibility to Alberta's market. A trial direct sales program will be started in 1999 by the Power Pool.

An independent Power Pool Council (see page 22) governs the Pool and is responsible for its fair, safe and efficient operation. As well, an independent Transmission Administrator (see page 22) oversees the use of the transmission system by buyers and sellers to ensure fair rates, non-discriminatory access for all market participants and the safe, reliable operation of the system.

Here's how the Pool works.

For every hour of the next day, suppliers offer power to the Pool at various prices and in various quantities. Under Alberta's new electric industry structure, these suppliers will include marketers holding Power Purchase Arrangements (see page 18), independent power producers and importers.

How the Pool price is set



At the same time, purchasers put in their bids indicating how much power they are willing to buy at different prices. Purchasers will include retailers, direct access customers and exporters.

Bids are ranked from highest to lowest according to willingness to pay. These bids and offers form the basis for a forecast of how much power will be needed on the system during that hour and what generating units will be dispatched (brought on line) to meet the demand on the system.

A single price is declared for each hour based on a weighted average of the price of the last generating units that must be dispatched to meet the province's total electrical load in that hour.

In this system, the lowest-cost generators are used first and the more expensive ones are only brought in as necessary to handle a higher load. When overall demand is low, the cost of electricity can be lower since only the lower-cost generators are running. Customers with time-of-use meters and the appropriate rate package may be able to save money by running power-hungry machinery or appliances during these non-peak hours and reducing consumption during peak hours.

Power distributors take all of their energy from the Pool – and pay the hourly Pool price for the energy they buy. All energy is traded at the declared Pool price for the hour.

Selling power means more than simply access to transmission wires. It means being integrated into the operation of the entire system from moment to moment. Bringing a generation unit on line may change transmission constraints, and require adjustments to dispatch instructions and the desired level of operating reserve. For that reason, buyers and sellers dealing with the Pool pay a system access charge that covers the cost of power losses that occur through these adjustments, plus system support services and access to transmission wires.

Unified transmission system

The province-wide transmission system functions as a single entity and is therefore managed and regulated as one entity. The physical transmission and distribution of electric energy are monopolies.

Building competing sets of wires across the province would result in unnecessary and expensive duplication.

The province-wide transmission system functions as a single entity and is therefore managed and regulated as one entity.

High-voltage transmission lines were built and maintained by existing utilities. They retain ownership of these wires and related facilities under the new electric industry structure. Utilities recover their costs under tariffs established by the Transmission Administrator and approved by the Alberta Energy and Utilities Board (EUB).

Buying and selling energy

Sales through Pool. Marketers with Power Purchase Arrangements for generating units built under regulation, independent power producers with new generation and importers will offer power into the Power Pool at competitive prices.

Purchases through Pool. Retailers will bid to purchase power from the Pool according to the needs of their customers, placing hourly bids to indicate how much power they are willing to buy at different prices. Retailers bill their customers according to meter readings and the terms of the agreement in place. They collect the payments and settle with the Power Pool.

Direct purchases from Pool. Direct access customers and exporters submit bids to buy from the Pool and pay the hourly prices for energy taken.

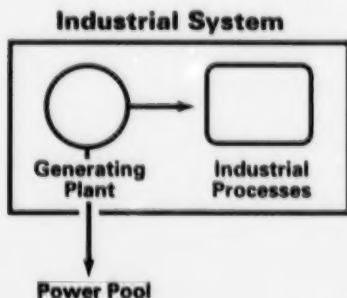
Direct sales to customers. In addition to sales through the Pool, independent power producers also will be able to sell their power directly to retailers, distribution utilities or other customers. Direct sales are filed with the System Controller so that they can be scheduled as transactions on the power system.

System access and other charges. Buyers and sellers dealing with the Pool, including direct sales traders, pay a system access charge that covers the cost of power lost through transmission constraints plus system support services and access to transmission wires.

Industrial systems

Many industrial companies produce power for their own use as part of an integrated industrial process.

Industrial systems that operate in this way are exempted from provisions of the Electric Utilities Act. For example, power produced by these systems does not have to be sold through the Power Pool provided that it is used exclusively as the internal electrical supply for industrial processes. Any excess power beyond what is used for internal electricity supply may be exchanged through the Power Pool, thus adding to the supply available for all Albertans.



This exemption encourages integrated industrial systems to develop their own internal electricity supply, if that is the most economic source of generation. This helps to keep Alberta industry competitive, creating jobs and wealth for Albertans.

At the same time, the Alberta Energy and Utilities Board (EUB) ensures that independent electricity systems are not developed simply to avoid paying a fair share of system costs. Businesses seeking an industrial systems classification for their power generation must obtain approval from the EUB.

The Transmission Administrator ensures that access to the Power Pool via the transmission system is provided in a fair, open, transparent and non-discriminatory manner and that the system itself is reliable. Open access means that the transmission system is available to all power producers on the same terms. This ensures that owners of the transmission system cannot put competitors at a disadvantage. To access the Pool, all market participants must have a system access agreement with the Transmission Administrator.

The government has appointed the independent firm of ESBI Alberta Ltd. as Transmission Administrator. ESBI took over as transmission administrator on June 1, 1998 in place of the Grid Company of Alberta, which is owned by the four major wire owners in the province.

The Alberta Energy and Utilities Board (EUB) regulates transmission and distribution to protect consumers from monopoly power. The EUB is responsible for approving the system-access tariffs of the Transmission Administrator and the distribution tariffs of investor-owned distribution utilities.

These tariffs cover the cost of providing the high-voltage transmission system and the cost of taking the electricity down to the customer level on the low-voltage distribution system.

Deregulation of the generation market

In a regulated environment, rates paid by consumers were approved by the Alberta Energy and Utilities Board (EUB). They were set high enough to allow the generators to recover their costs and earn a reasonable return on their total investment in the generating units. This system put a lot of focus on winning battles in regulatory hearings rather than on creating operations that are more cost efficient. These hearings were time-consuming and costly for the generators and government, and ultimately for consumers.

The new structure introduces competition into the province's generation sector. Long-term contracts called Power Purchase Arrangements will ensure that many marketers, rather than just three utilities, will sell power from plants built under regulation.

The need for regulatory approval for new generation ended after 1995.

From 1996 on, new generation has been built based on competition in an open market. This means that independent power producers and importers can compete on an equal basis with existing utility generators.

Independent power producers and importers can compete on an equal basis with existing utility generators.

Recovering transmission costs

The tariffs established by the Transmission Administrator are based on four key concepts:

"Postage-stamp rates" to distributors. Distributors are charged the same tariff for transmission, regardless of how far they are from generation sources. This ensures that the electricity rates paid by consumers are based on a system-access tariff that is independent of where they are located in the province.

Location-based rates for generators. The transmission rates paid by generators selling power into the system will depend on how far they are from points where the power will be used. This will encourage suppliers to locate facilities for the maximum efficiency of the system.

System support services costs. A transmission system depends on more than just power lines and transformers to deliver power. The system must also deliver power at stable voltages. It therefore requires such support services as "spinning reserve" and automatic generation control to maintain the system within narrow tolerances as load rises and falls. A transmission system also loses a certain amount of power in delivery across long distances. These costs are recovered through system-access tariffs.

Import and export rates. Importers and exporters of electricity pay a fixed system access fee for all contracts to offset the cost of administering them. A transmission transfer charge per megawatt hour is posted daily by the Transmission Administrator for service on the following day.

Power Purchase Arrangements

Power Purchase Arrangements will start on January 1, 2001 and run for a maximum of 20 years. Twenty years should be sufficient time to allow for development of a robust market in which no single firm has any significant degree of market power.

Windfall profits that could have been earned by the utilities through the move to the market environment will be transferred to the customers during this time.

The 20-year period allows ample time for the utilities to recover any stranded costs in their generation investments. This period also gives utilities an incentive to make efficient investment decisions on maintaining and extending the life of their plants.

Recovering power costs

Customer payments to retailers. Starting January 1, 2001, customers can choose the retailer that offers them the best combination of price, service and features to suit their particular needs. The retailer provides the customer with a monthly invoice that covers the cost of electricity provided. This invoice includes the energy cost and a share of the retailer's distribution tariff that is paid to the owners of the distribution wires for the use of those wires. The customers pay the monthly bill for the energy and services.

Regulated rate option. If they wish, home and farm customers can purchase electricity from their current utility distributor for up to five years under a regulated rate option, starting January 1, 2001. The rate covers all the costs associated with independent retailers but is regulated by the Alberta Energy and Utilities Board. Eligible small commercial and industrial customers will have this option for three years.

Power Pool purchase. Retailers (and utility distributors providing the guaranteed regulated rate) purchase power matching the requirements of their customers from the Power Pool. Alternatively, retailers may obtain the power needed for their customers by contracting with other retailers, brokers or aggregators. Retailers and other direct access customers may purchase electricity directly from independent power producers.

Retailers compensate wire owners. Retailers pay the owners of the distribution wires (municipalities, utilities and rural electrification associations) according to tariffs established by these wire owners. These tariffs compensate wire owners for the costs of building and maintaining the distribution system and related activities that may be handled by the wire owners such as metering and information systems.

The Power Purchase Arrangements will be set up to accomplish three objectives:

1. To ensure that customers continue to benefit from the low-cost power available from existing generation.
2. To ensure that the generation market is competitive and that there is no abuse of market power by the three major utilities.
3. To ensure that the investment decisions made by the owners of these generating plants are based on expected future market prices and not on continued intervention by government or the regulator.

These arrangements will effectively end cost regulation of generating units by the Alberta Energy and Utilities Board.

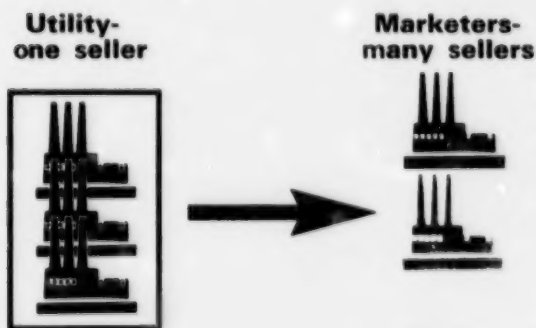
How the arrangements work

Under Alberta's traditional regulated structure, the province's three major utilities have been the principal sellers of electricity into the Power Pool. Under the new structure, independent marketers will replace the utility generators as sellers into the Power Pool.

These marketers will purchase the right to sell the output of individual generating units (each utility has a number of generating units) into the Pool. These rights are based on long-term arrangements, called Power Purchase Arrangements.

Power Purchase Arrangements will only apply to generating units built under regulation, that is before 1996 when the Electric Utilities Act came into effect. They do not apply to non-utility generating units or any units built after 1996.

For units built under regulation, Power Purchase Arrangements mean more competition in the Pool – leading to competitive rates for consumers. Competition is produced by splitting the output of an incumbent utility generator among several marketers. A single seller offering in power from several plants is replaced with a number of sellers competing to offer power from individual plants.



The arrangements will be sold to the independent marketers in an open auction. The bidders who offer to pay the highest premiums to acquire the arrangements will become the marketers. They will acquire the right to sell the output of a particular generating unit to the Power Pool.

Deregulation highlights

In place of regulation, the owners of generating units built before 1995 will recover their fixed and variable costs (including a fair provision for return on investment) based on a rate or formula set by an independent expert body, called the Independent Assessment Team.

The Independent Assessment Team will establish long-term arrangements (called Power Purchase Arrangements) for the life of a generating unit, including a life extension period, to a maximum term of December 31, 2020.

The Power Purchase Arrangements will replace existing regulation, while ensuring that utilities have an opportunity to recover investments made in a regulated environment and that customers continue to receive the benefits associated with existing low-cost generation.

Under the Power Purchase Arrangements, many marketers will sell power into the Power Pool. This allows the generation market to become more competitive, thereby putting downward pressure on prices.

The transition to full deregulation over 20 years provides ample opportunity for benefits to be passed on to customers and for the utilities to recover "stranded costs."

The amount paid by all the marketers for all the arrangements will be deposited into a financial account overseen by the Power Pool of Alberta. The account's purpose is to ensure that the costs and benefits of existing generating units continue to be shared among all Albertans. Funds from this account will be allocated to customers through their electrical retailers. The EUB will determine a just and equitable method of allocation.

The successful bidder will acquire the right to sell the output of a particular generating unit into the Power Pool.

The arrangements that the marketers purchase will set out terms for each generating unit that was built under regulation. These terms include:

- The quantity of electricity to be provided from the unit.
- Performance provisions.
- Fixed and variable costs.

The auction will be subject to a minimum bidding price, known as the reserve price. Limitations will be placed on the amount that a single purchaser can acquire. These limits will encourage competition and a level playing field by reducing the possibility that any single purchaser can unduly influence the market.

At the same time, the Power Purchase Arrangements do not require the utilities to divest themselves of any plant. The utilities will continue to operate their generating plants. The arrangements are a means of determining a plant's market value without actually selling the plant. The prices that independent marketers put on the output of a plant's generating units through the auction of Power Purchase Arrangements reflect the plant's value.

This valuation is used in calculating both the windfall profits that should be returned to customers and the stranded costs that might be owed to the owners of the plants because of the move from regulation.

Power Purchase Arrangements are designed and established by the Independent Assessment Team (IAT) working in consultation with stakeholders and the government.

The IAT consists of a group of independent, multi-disciplinary experts appointed by the Minister of Resource Development. The firm and its members have no material stake in Alberta's electricity industry. (The Alberta government selected PricewaterhouseCoopers for this task. This firm is working with Charles River Associates/Market Design Inc. on the design of the Power Purchase Arrangement auction.)

Power Purchase Arrangements are subject to review by the Alberta Energy and Utilities Board (EUB) to make sure that they are in the public interest.

Section 6: Timetable for change

1998

- Electric Utilities Amendment Act, 1998 given royal assent.
- Regulation completed empowering the Power Pool Council to undertake market surveillance and to enforce sanctions against anti-competitive behaviour.
- Independent Transmission Administrator takes office.
- Independent Assessment Team appointed to establish terms of long-term arrangements (Power Purchase Arrangements) for the remaining life of each generating unit built prior to 1996, including a life extension period, to a maximum term of December 31, 2020.
- Independent Assessment Team posts preliminary proposals on design of Power Purchase Arrangements, initiating discussions with marketers and other parties.

1999

- Department of Energy releases final recommendations on auction design and draft regulations for discussion on:
 - Financial qualifications and other eligibility requirements for participation in the Power Purchase Arrangements auction.
 - Limits on allowed purchases and minimum bids in the auction.
- Independent Assessment Team submits final determination of long-term Power Purchase Arrangements.
- EUB approves long-term Power Purchase Arrangements to ensure that they are in the public interest.
- Design of Power Purchase Arrangement auction finalized.
- Customer choice begins for those who have time-of-use meters and the ability to take direction from the System Controller to alter their electrical loads.

2000

- Auction of Power Purchase Arrangements.
- Municipalities finalize distribution tariffs that will be charged to retailers using distribution wires.

2001

- Long-term Power Purchase Arrangements begin (2001-2020).
- Customer choice introduced for all customers. Full competition for retail services begins.
- Five-year regulated rate option introduced for home and farm customers; three years for eligible small commercial and industrial customers.

2020

- Power Purchase Arrangements end.

Appendix A: Functions of entities set up under the new electric structure

Power Pool Council

An independent Power Pool Council is responsible for making sure the Pool operates as an open, fair and efficient market for power.

The Council establishes the rules by which the Pool operates, and appoints the Pool Administrator and System Controller. The Council is responsible for:

- Determining and imposing sanctions on market participants found to be in violation of rules or engaging in anti-competitive practices.
- Setting up a binding process for dispute resolution.
- Reporting infractions of rules, laws or regulations to the appropriate authority, if it is unable to deal with the matter itself.
- Making recommendations regarding changes to rules, laws or regulations to the appropriate authority, where such changes would serve to increase the efficiency and fairness of the markets.
- Determining the costs of running the non-profit Pool and recovering these costs through membership fees charged to Pool participants.

Power Pool Administrator

The Power Pool Administrator carries out the financial transactions and general operations of the Pool. This includes:

- Managing the bid-offer process in which participants submit their prices for supplying to and receiving power from the Pool.
- Determining the overall schedule for unit operation based on the selling prices offered.
- Scheduling units to provide system services, such as operating reserve. This reserve is the additional generating capacity kept on the system in case of plant failure or unexpected surges in demand.
- Carrying out all the financial settlements so that distributors pay for the power they purchase and generators receive payment for the power they produce.

Market Surveillance Administrator

The Market Surveillance Administrator (who is a member of the Power Pool Council) is responsible for:

- Performing on-going monitoring of electricity markets to ensure efficient and fair operation of the

markets and compliance with all rules, laws and regulations governing the behaviour of participants in those markets.

- Investigating complaints by market participants.
- Making recommendations to the Power Pool Council regarding the disposition of complaints and improvements that could be made to rules and procedures.

System Controller

The System Controller is responsible for the task of keeping a large, dynamic electric system physically stable. This is a minute-by-minute, hour-by-hour job as load rises and falls, as generating units come onto the system, as maintenance problems arise with transmission facilities or generators. Specific tasks include:

- Dispatching units and price-responsive demand bids according to the schedule set by the Power Pool Administrator.
- Coordinating with owners of transmission facilities for the use of the high-voltage wires.
- Communicating system services requirements to the Power Pool Administrator and making sure the system has adequate levels in place at all times.

The Transmission Administrator

The Transmission Administrator is responsible for the overall coordination of the transmission system. This includes such functions as:

- Contracting with individual transmission owners to provide services.
- Acting as the financial clearing house between the buyers of transmission services (generators, distributors, importers and exporters) and the transmission owners.
- Setting province-wide tariffs for system access.
- Interacting with the Power Pool on issues such as the amount of generation needed for operating reserve.

Distributors purchase system access and pay for it according to the province-wide tariff established by the Transmission Administrator. In this way, all consumers pay a common, postage-stamp cost for transmission no matter where they are located in the province.

Appendix B: Glossary of terms

Alberta Energy and Utilities Board (EUB)

A quasi-judicial regulatory agency that adjudicates matters related to utilities and energy in Alberta.

Auction

A public sale of each generating unit's Power Purchase Arrangement to the highest bidder. The highest bidder becomes the "marketer" for that generating unit.

Cogeneration

The combined production of electricity and useful heat. Cogeneration is often employed at industrial plants where the heat produced can be used in the manufacturing processes and for general space heating.

Customer

A person who purchases electricity for his or her own use.

Customer Choice

The ability of a customer to choose his or her retail supplier of electricity.

Department

Alberta Department of Resource Development.

Deregulation

- i) allowing free entry into the generation market by removing regulatory requirements for obtaining approval of new generation based on an assessment of need and
- ii) moving from the current system of utility cost recovery, in which utilities are allowed to recover costs and a rate of return on investment from customers through rates approved under regulation, to a market system where costs are recovered through the sale of power and rates of return are determined by how efficiently the utility competes in the market.

Direct Access Customer

A customer whose consumption of electricity is measured by a time-of-use meter, and who receives electricity at the high voltage transmission level, or who is able to change consumption of electricity after receiving a dispatch instruction from the system controller. These customers may participate in the Power Pool of Alberta by placing bids for their electricity consumption requirements.

Direct Access Tariff

A rate that shows separate charges for electric energy, distribution access, system access, and a share of the costs and benefits of the regulated generating units built before 1996.

Distribution

The low voltage power lines and related facilities that carry power from the transmission grid to the end-use customers.

Distribution Access Service

Services associated with transporting electricity to customers by means of an electric distribution system.

Distribution Tariff

The rates charged by an owner of an electric distribution system or any entity acting on behalf of that owner for provision of distribution access service.

Electric Distribution System

The plant, works, equipment, systems and services necessary to distribute electricity in a service area.

Electricity

Defined in Section 1(1)(g) of the Electric Utilities Act as electric energy, electric power, reactive power or any other electromagnetic effects associated with alternating current or high voltage direct current electric systems.

Electricity Services

Services associated with the provision of electricity to customers, including: arrangements for the supply and costs of electricity purchases, distribution access service, system access service, system support services, billing, metering, maintaining information systems, and any other services specified in the Electric Utilities Amendment Act regulations.

EUA

Electric Utilities Act S.A. 1995 c.E-5.5.

EUAA

Electric Utilities Amendment Act, 1998 S.A. 1998 c.13.

EUB

The Alberta Energy and Utilities Board.

Generation

The production of electric energy by electric power plants; alternatively, the power plants themselves.

Green Power

Electricity generated using renewable sources such as wind power.

Grid

The high-voltage transmission system connecting generators to distributors.

IAT	Independent Assessment Team pursuant to EUAA s.45.2.	Market share	The portion of a market served by a single firm.
Independent Assessment Team	A team of multi-disciplinary experts appointed by the Minister of Resource Development from one or more consulting businesses retained to determine terms and conditions respecting Power Purchase Arrangements.	Marketers	The purchaser of a Power Purchase Arrangement through a competitive process, allowing the purchaser the rights to offer a specified output of electricity into the Power Pool of Alberta. Alternatively, any firm which engages in the business of managing the risk of the buying and selling of power.
Independent Power Producer	A non-utility owner of generating facilities.	Megawatt (MW)	A measure of the power produced by a generating unit. One MW is equal to 1,000 kilowatts.
Independent Retailer	A licensed retailer not affiliated with the utility that owns or operates the distribution system. The retailer purchases electricity through the Alberta Power Pool and sells it to customers in Alberta. Also a licensed retailer not affiliated with a utility which sells electrical services and products such as meters to customers.	Metering	The purchase, installation, operation and reading of a meter that measures and records the amount of electricity consumed by a customer.
Industrial System	The production of electric energy as part of an integrated industrial process. The electricity is used by the various components and facilities of that process.	Natural Monopoly	A market is a natural monopoly if the production technology is such that it is cheapest to have the entire market served by a single supplier.
Integrated Industrial Process	An industrial production process whose individual components are highly integrated through ownership, management, use of outputs and infrastructure.	Pool Price	The price at which energy is traded through the Power Pool of Alberta. A separate price is set for each hour of the day. It is based on the weighted average of the highest-priced units required to balance supply and demand during the hour.
Interconnected System	Plants and loads that are interconnected by a continuous transmission system in Alberta.	Power	Electricity. Defined in Section 1(1)(g) of the Electric Utilities Act as electric energy, electric power, reactive power or any other electromagnetic effects associated with alternating current or high-voltage direct current electric systems.
Kilowatt Hour (kWh)	The commercial unit of electricity, 1,000 watt-hours. One kilowatt hour is equal to 3.6 million joules. A typical household might use between 500 and 1000 kWhs of electricity per month, depending on the time of year and the energy efficiency of the home.	Power Pool Administrator	Responsible for running the Power Pool as a market and for handling the financial settlement of exchanges through the Pool.
Level Playing Field	A competitive market in which no participant has an unfair advantage over other participants in gaining access to the market.	Power Pool Council	An independent organization appointed by the government that monitors the performance of the Power Pool and sets the rules of the Power Pool to promote an efficient, fair, and openly competitive market for electricity. The Council has a broad mandate to conduct market surveillance and dispute resolution to ensure that the new markets are working efficiently and fairly.
Load	The total electricity demand for service on a utility system at any given time. Alternatively, the demand for electricity by a single customer.		
Local distribution utility	Utilities that own or operate systems that distribute power to customers within a designated municipality or distribution area.		
Market Power	The ability of a firm to raise price without fear of losing market share. Businesses maintain market power by creating barriers to the entry of new competition.		

Power Pool of Alberta

The market through which electricity in the province is exchanged. Producers sell power into the Pool and consumers buy power through the Pool at a single price.

Power Purchase Arrangement (PPA)

A long-term arrangement (maximum 20 years) to be set for each regulated generating unit. The arrangement will include the quantity of electricity to be provided, performance provisions, penalties, and formulas to determine fixed and variable costs. It will allow the owner of the generating unit to recover investments made in a regulated environment during the arrangement period.

Price-responsive Load

A customer's load is price-responsive if the customer is willing and able to change its electricity consumption in response to changes in the Pool price.

Regulated Monopoly

A firm which has been granted an exclusive right or franchise by the government to serve a particular market and whose prices, in turn, are regulated by the government.

Regulated Rate

A tariff that wire services providers must make available for regulated rate customers to be charged for all electricity services from 2001 to 2005.

Regulated Rate Customer

Customers eligible to choose a "regulated rate option" from their existing distribution utility or wire service provider, beginning in 2001.

Stranded Cost

Amount of investment that the owner of a regulated generating unit cannot expect to recover because of the move to a competitive market from a regulated environment.

In Alberta, this amount will be determined by having marketers bid through a competitive process for the output of each generating unit. The amount of the bid that is less than the fixed and variable costs establishes the stranded cost paid from the financial account administered by the Power Pool of Alberta. This account ensures that the costs and benefits of existing generating units continue to be shared among all Albertans.

System Access Charge

Charges by the Transmission Administrator for providing access to Alberta's transmission system.

System Controller

The person responsible for keeping the electric system physically stable. This person coordinates the total demand and supply on the system in real-time.

Time-of-use Meter

A meter that measures, at intervals of between 15 and 60 minutes, the amount of electricity consumed and that satisfies the standards set under the Electricity and Gas Inspection Act (Canada) and the Weights and Measures Act (Canada) for revenue collection based on time-of-use consumption.

Transmission

The system of high-voltage power lines and related facilities that link generating units and customer loads throughout the province.

Transmission Administrator

The agency responsible for ensuring open and non-discriminatory access to the Power Pool by buyers and sellers. It sets system access rates, coordinates the overall operation of the transmission system and is responsible for making the financial arrangements to ensure that adequate transmission facilities and system support services are available.

Wire Service Provider

Wire service providers will operate and maintain electrical distribution systems, perform metering, maintain information systems and undertake financial settlement with the Transmission Administrator.



Comments and further information

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